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Corrections for Contamination Background in AMS ^{14}C Measurements.

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Abstract

Measurements of $^{14}C/^{13}C$ ratios of a standard material (OX1) and ^{14}C "dead" materials have been made which span the mass range from about 10 μg to 2 mg. These measurements have allowed the determination of both the amount of the contaminant carbon introduced during sample processing in our laboratory and ^{14}C content of the contaminant carbon. These data have been used to correct $^{14}C/^{13}C$ ratios obtained for an ~one-half-life old test sample for influence of the background contaminant. The $^{14}C/^{13}C$ ratios measured for the test sample span the 10 μg to 2 mg mass range and the corrections have been made using three different formulae. The results obtained from these calculations allow the accuracy of these background correction formulae to be evaluated.

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